

Service Manual

Mini Cassette

Auto-Reverse Cassette Recorder
with Voice Activated System

RQ-382
(Silver)



This is the Service Manual
for the following area.

M ...For U.S.A.

RQ-382 MECHANISM SERIES

■ SPECIFICATIONS

Power Requirement:	AC; 120V, 60Hz (with included Panasonic AC Adaptor) Battery; 3V (Two "AA" size batteries) (Panasonic UM-3 or equivalent) Car Battery; with optional Panasonic Car adaptor RP-993 and Panasonic DC Plug Adaptor RP-007
Power Consumption:	4W (AC only)
Power Output:	600mW (R.M.S. max.)
Frequency Response:	250~7,000Hz
Motor:	Electrical governor motor
Tape Speed:	1 $\frac{7}{8}$ ips (4.8cm/s)
Track System:	2-track monaural recoding and playback
Recoding System:	AC bias, Magnet erase
Jacks:	Mic; sensitivity 0.25mV/applicable microphone impedance 200~600 Ω (ϕ 3.5) DC IN; 3V (ϕ 2.5) Monitor; 8 Ω (ϕ 3.5)
Speaker:	1 $\frac{25}{32}$ " (4.5cm) PM Dynamic Speaker, 8 Ω
Dimensions:	2 $\frac{7}{8}$ "(W) \times 4 $\frac{7}{16}$ "(H) \times 1 $\frac{3}{8}$ "(D) [82.5(W) \times 113(H) \times 34.5(D)]mm
Weight:	10.2oz (290g) without batteries

Weights and dimensions shown are approximate.
Design and specifications are subject to change without notice.

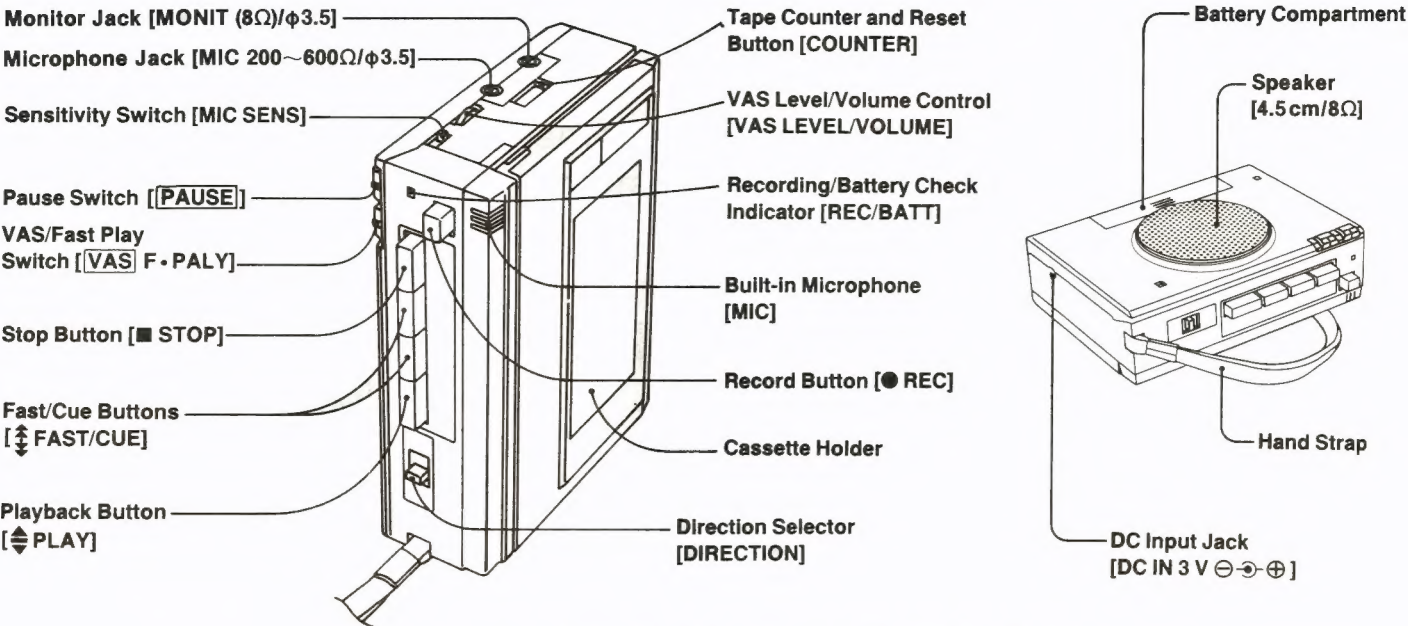
Panasonic®

Matsushita Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhū St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave. 65 De Infantería, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

LOCATION OF CONTROLS AND COMPONENTS



DISASSEMBLY INSTRUCTIONS

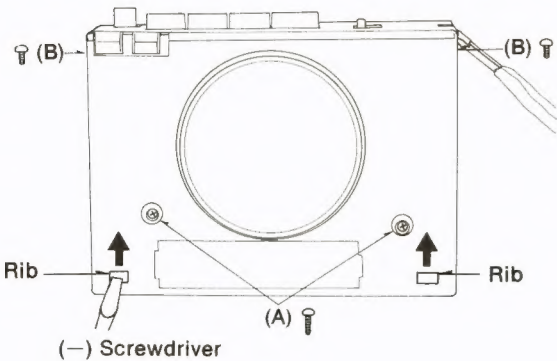


Fig. 1

1. Remove the screw (A) (2×8)mm×2.
2. Remove the screw (B) (1.6×4)mm×2.
3. Push the rib with screwdriver in the direction of arrow and remove the Rear Cabinet Ass'y.

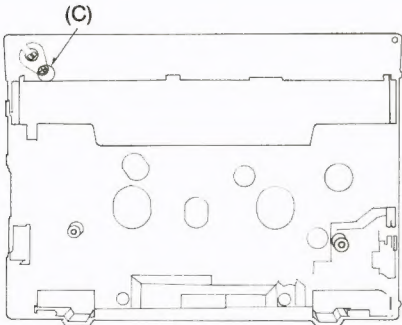


Fig. 3

5. Remove the screw (C) (1.6×4)mm×1 and then remove the microphone holder and microphone.

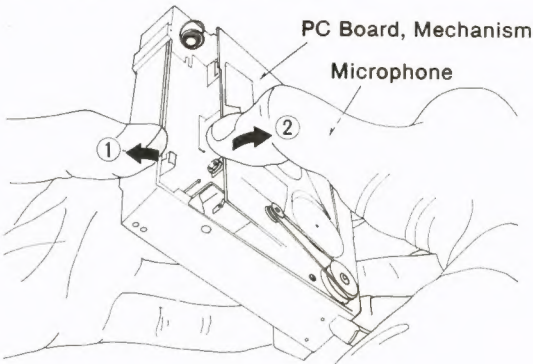


Fig. 2

4. Open the bottom of the front cabinet in the direction of arrow ①, and remove the PC board and mechanism in the direction of arrow ②. (Be careful not to break the microphone wire.)

Note: When removing the PC board and the mechanism, the jack cover and microphone sensitivity selector knob will come off, so be careful not to lose them.

(Assembly precaution: Mounting the Battery Terminal after aligning the Battery Terminal with the Rear Cabinet Ass'y.)

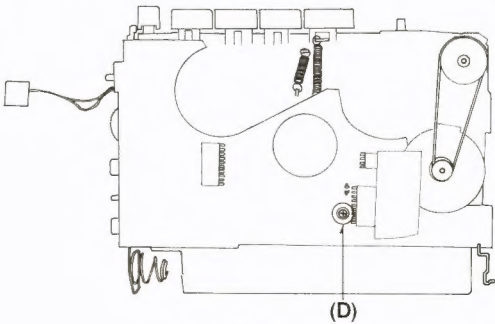


Fig. 4

6. Remove the screw (D) (1.6×4)mm×1.

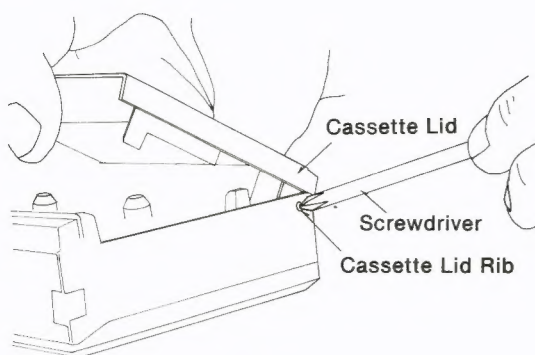


Fig. 5

7. Push the rib with the end of a Phillips screwdriver to remove the cassette compartment.

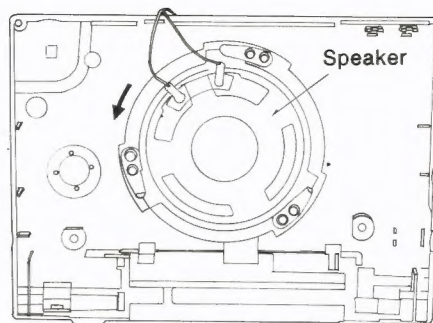


Fig. 6

8. Turn the speaker in the direction of the arrow to remove it.

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set F. PLAY/VAS switch to OFF.
3. Set MIC SENS switch to OFF.
4. Set PAUSE OFF/Lock switch to OFF.
5. Set power source voltage to 3V DC.

■ ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Head azimuth	QZZCFM (8kHz, -20dB)	Headphones jack	Maximum output	Head adjustment screw	
Governor circuit (μ adjustment)	QZZCWAT	Headphones jack	Wow and flutter: Less than 0.5% (RMS)	Short the slit(B) by soldering.	Before measurement, short the slit (A) and open the slit (B) by soldering.
Tape speed	QZZCWAT	Headphones jack	$3000 \pm 90_{60}$ Hz	VR2	(1) Playback the test tape in both forward and reverse directions. (2) Adjust VR2 to obtain counter readings within specified tolerances for both directions.

■ ADJUSTMENT POINT

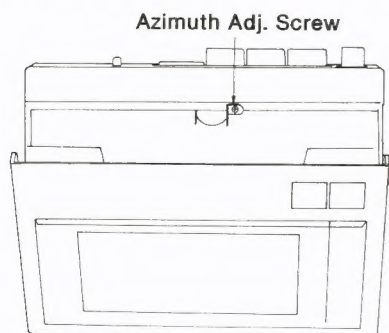
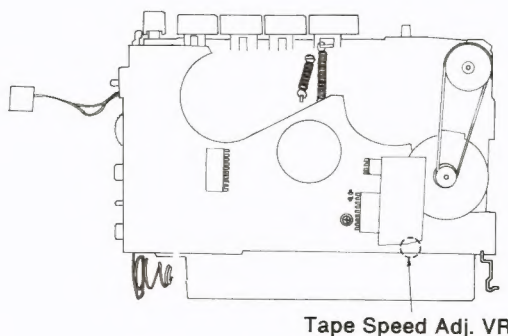


Fig. 1



Tape Speed Adj. VR

Fig. 2

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω) 2R2
ERX	2	AN	J	
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage	Tolerance
ERD: Carbon	10 : 1/8 W	J : ±5%
ERG: Metal Film	12 : 1/2 W	
ERX: Metal Film	25 : 1/4 W	
ERQ: Fuse Type Metal	1 : 1 W	
RRD: Carbon (Chip Type)	18 : 1/8 W	

Numbering System of Capacitor

Example ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF) M	Tolerance	Peculiarity
ECEA	50		R47	
Type	Voltage	Peculiarity	Value (0.47 μF)	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	0J : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polyester	1E : 25 V		Z : +80%, -20%
	1H : 50 V		P : +100%, -0%
ECQP: Polypropylene	1V : 35 V		
	50 : 50 V		
ECET: Electrolytic			
ECEA□□□□N: Non Polar	25 : 25 V		
Electrolytic	16 : 16 V		
QCU □: Ceramic (Chip Type)			
ECUX: Ceramic (Chip Type)			

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚡ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
CAPACITORS		C 10	ECEA1HKK010	RESISTORS		R 12	RRD10XJ331	R 28	RRD10XJ391
C 1, 11	QCUX1E333MRL	C 13, 17, 27, 32, 34, 35	QCUX1E104ZFX	R 1, 11	RRD10XJ152	R 13	RRD10XJ181	R 29	RRD10XJ824
C 2	QCUX1H152KUX			R 2, 16	RRD10XJ562	R 14	RRD18XJ271	R 31	RRD10XJ823
C 3, 20, 26	QCUX1H222MRL	C 15, 24, 30	ECEA1CKK4R7	R 3, 34	RRD10XJ153	R 15, 30	RRD10XJ332	R 32	RRD10XJ274
C 4, 38	QCUX1H102MRL	C 16	QCUX1E223MRL	R 4	RRD10XJ5R6	R 17	RRD10XJ751	R 35	RRD10XJ474
C 5, 25	QCUX1H103MRL	C 18, 19	QCUX1E224ZFX	R 5	ERSB39JR40	R 19	RRD10XJ224	R 36, 38	RRD10XJ221
C 6, 7, 29, 33, 37	ECEA0GKK220	C 21	ECEA1EKK3R3	R 6, 40	RRD10XJ4R7	R 21	RRD18XJ183	R 39	RRD18XJ100
C 8	ECSE0JY225R	C 22	ECEA0GKS470	R 7	RRD10XJ682	R 22	RRD10XJ820	CHIP JUMPER	
C 9, 12, 14, 23, 36	ECEA0GKS101	C 28	ECEA0GKS221	R 8, 37	RRD10XJ822	R 23	RRD10XJ101	RJ 1, 4, 5, 6, 7	RRD18XJ000
		C 31	QCUX1H473ZFX	R 9, 20, 33	RRD10XJ273	R 24	ERSB15J103	RJ 2	RRD10XJ000
				R 10, 25	RRD10XJ100	R 27	RRD18XJ471		

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS			DIODE			SWITCHES		
IC 1	AN6221S	IC (PRE AMP)	D 2	SLB22UR3	LED (REC/BATT IND)	S 1	QSS4224	Slide Switch (REC/PLAY)
IC 2	AN6230S	IC (POWER AMP)				S 2	RSS2B40Z	Slide Switch (MIC SENS)
IC 3	AN6612S	IC (MOTOR CONTROL)				S 3	MSW1273NBK	Leaf Switch (Motor)
TRANSISTORS						S 4	QSS2235	Slide Switch (VAS/F•PLAY)
Q 1	2SC2412KS	Transistor (BIAS OSC)	L 1	QLB0195	Coil (BIAS OSC)	S 5	QSS1228	Slide Switch (PAUSE)
Q 2	2SA881SERF	Transistor (MOTOR DRIVE)				S 6	MSW1236	Leaf Switch (F/R Mode Select)
Q 3, 4, 5, 6	2SA1037KS	Transistor (VAS)				S 7	QSS2238	Slide Switch (Direction Select)
			COIL			JACKS		
						J 1	QJA0199	Jack (MIC)
						J 2	RJJD3S5Z	Jack (MONITOR)
			VR 1	EVLFBAA00A14	Variable Resistor (VOLUME)	J 3	RJJB2Z	Jack (DC In)
			VR 2	EVND1AA00B32	Variable Resistor (Tape Speed Adj.)			

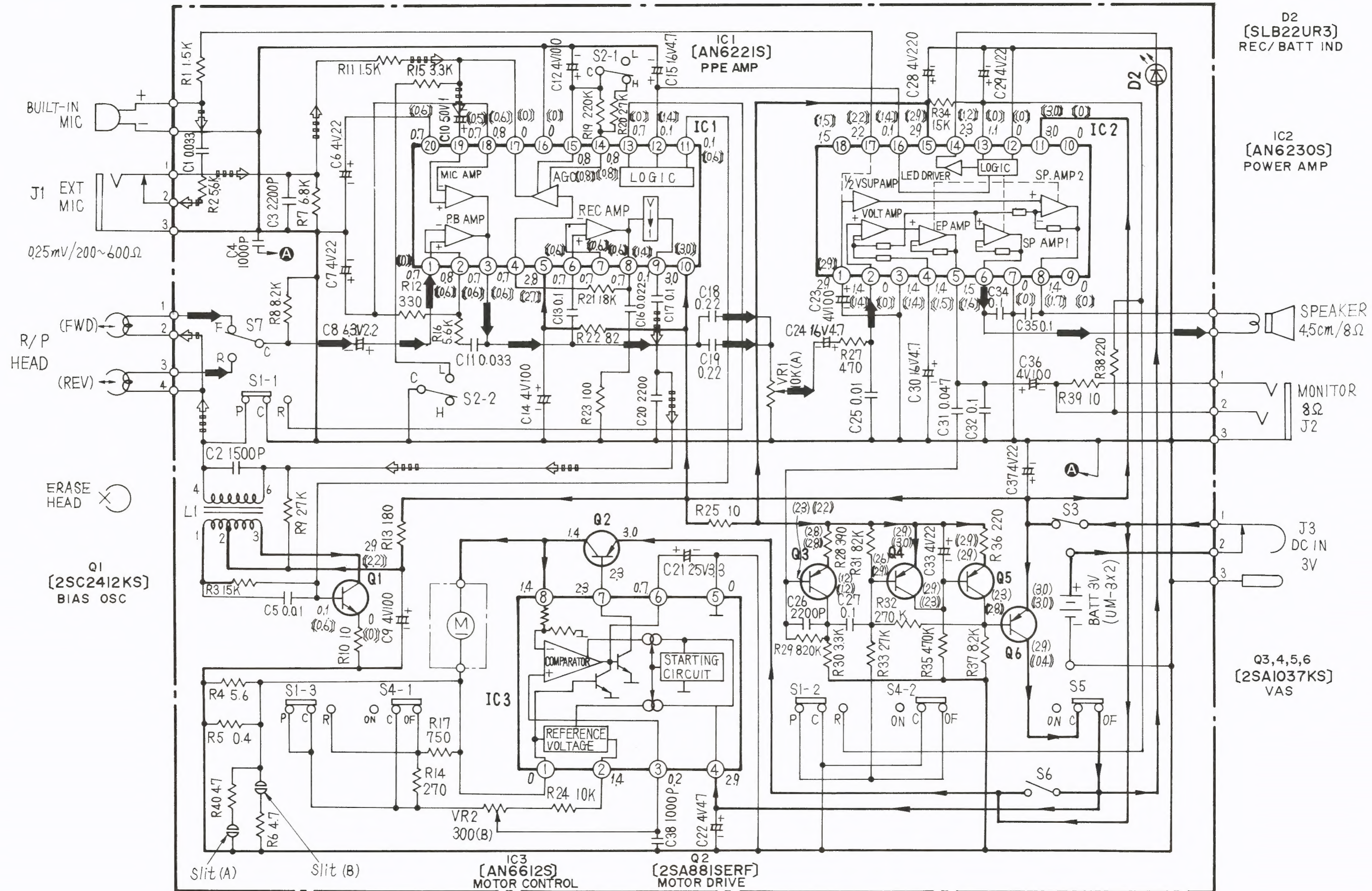
- Note:
 - S1-1~S1-3: REC/PLAY Selector Switch in "PLAY" Position.
(P...PLAY, R...REC)
 - S2-1, S2-2: MIC SENS Selector Switch in "High" Position.
(L...Low, H...High)
 - S3: Motor Switch in "ON" Position.
 - S4-1, S4-2: F. PLAY/VAS Switch in "OFF" Position.
(ON...ON, OF...OFF)
 - S5: PAUSE OFF/Lock Switch in "OFF" Position.
(ON...ON, OF...OFF)
 - S6: FWD/REV mode Select Switch in "OFF" Position.
 - S7: DIRECTION Select Switch in "FWD" Position.
(F...FWD, R...REV)
 - VR1: Volume/VAS Level control VR.
 - VR2: Tape speed adjustment VR.
 - DC Voltage measurement are taken with electronics voltmeter from negative terminal of battery.
No mark...PLAY, ([...])...REC. (...)...VAS OFF, (...)...VAS ON
 - Described is schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes.
One type number is used for supply parts number and production parts number which they are identical.
e.g. Q1
2SC2412NRTB, LNSTB—Production parts number
[2SC2412]—Supply parts number
 - The supply parts number is described alone in the replacement parts list.
• This schematic diagram may be modified at any time with the development of new technology.
Battery current: No signal 140mA
Maximum output 400mA
- ➡

PLAYBACK Signal Line
- ➡

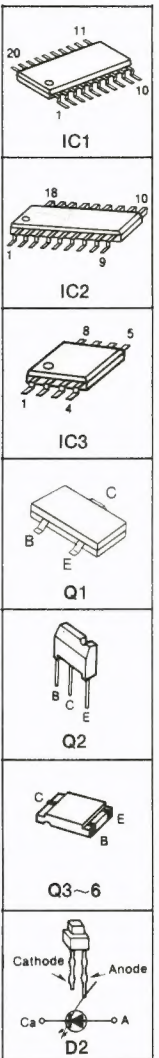
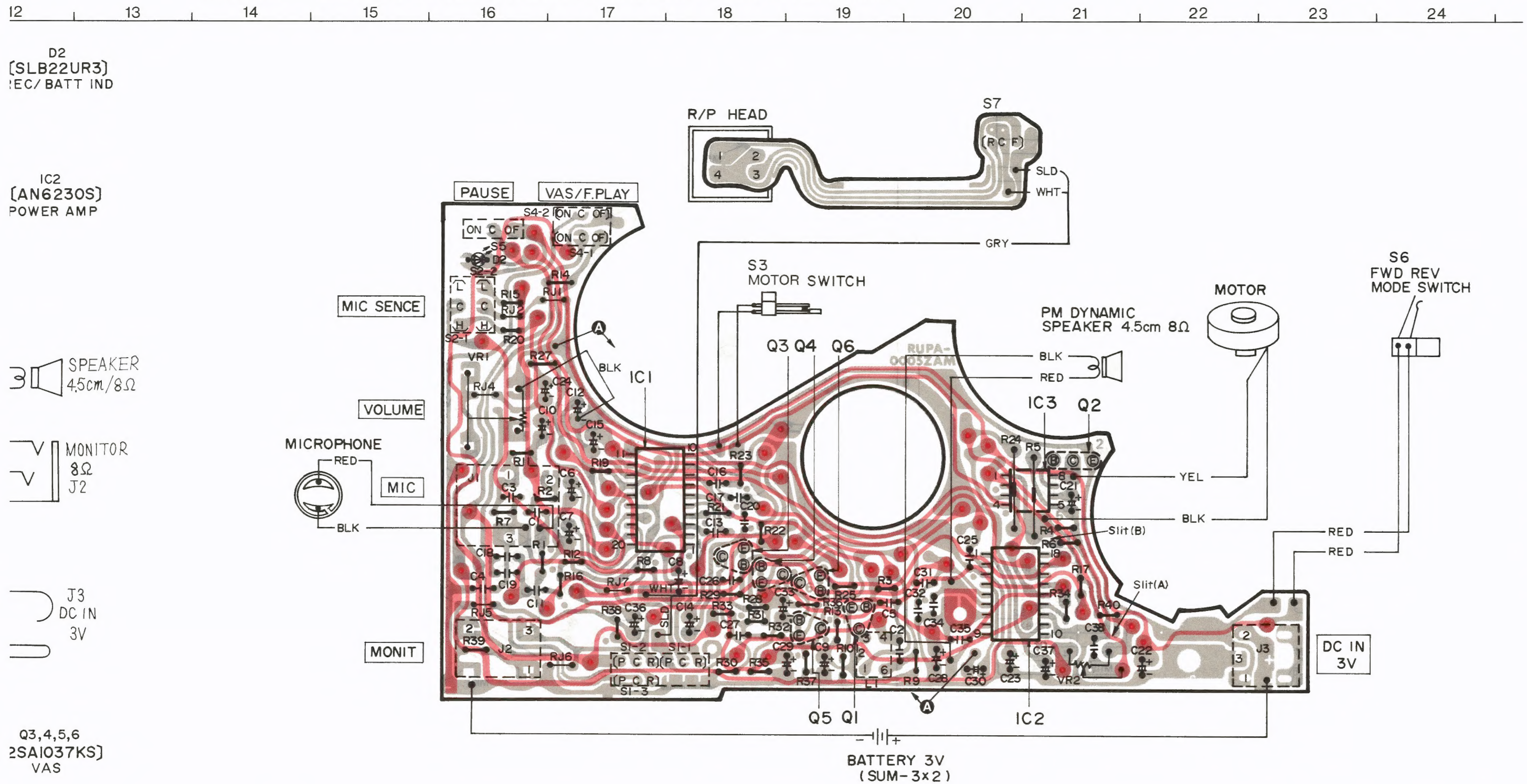
RECORD Signal Line

SCHEMATIC DIAGRAM MODEL

CIRCUIT



CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

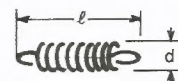
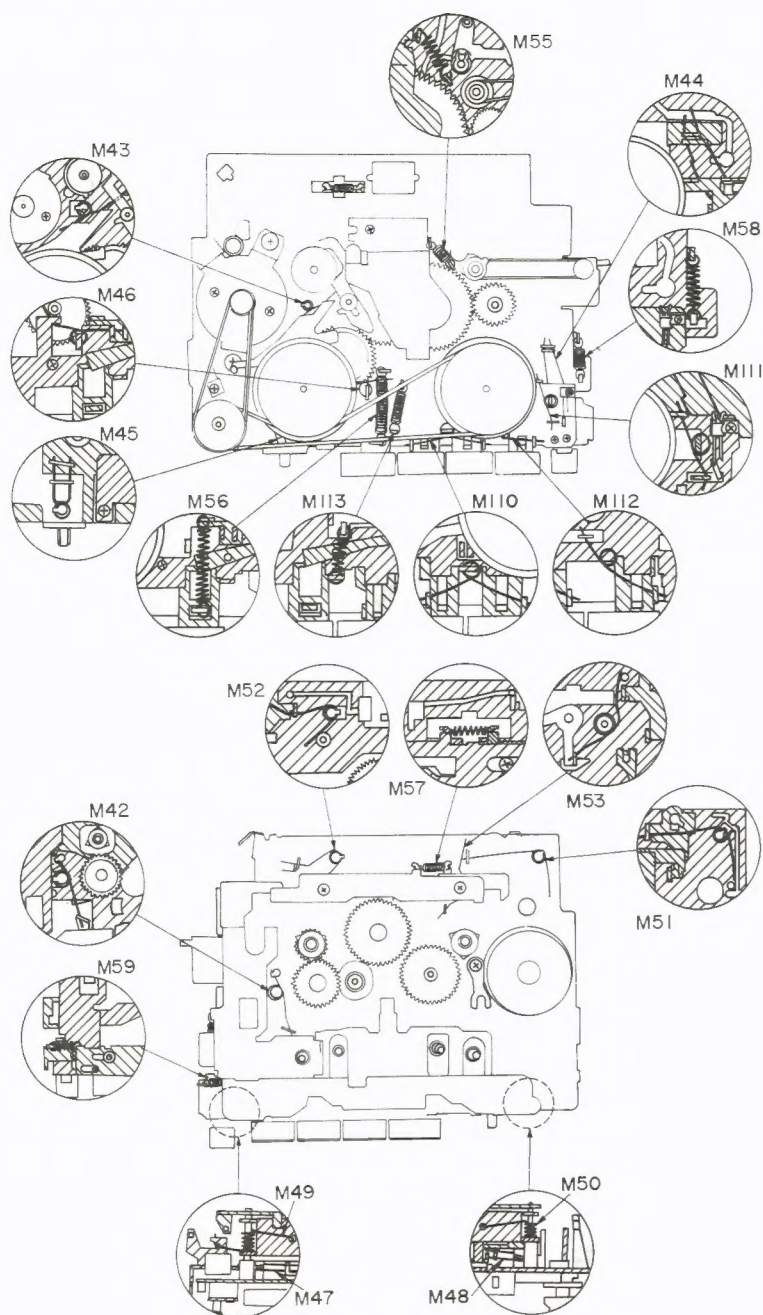


- NOTES:**
- The circuit shown in on the conductor indicates printed circuit on the back side of the printed circuit board.
 - The circuit shown in on the conductor indicates printed circuit on the front side of the circuit board, which is put the mechanism unit.
 - : Chip resistor
 - The circuit board diagram may be modified at any time with the development of new technology.

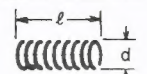
NOTES:

BLK.....Black	ORG.....Orange
BLU.....Blue	PNK.....Pink
BRN.....Brown	RED.....Red
GRY.....Gray	SLD.....Shield Wire
GRN.....Green	VLT.....Violet
L.BLU.....Light Blue	WHT.....White
NIL.....No Color Mark	YEL.....Yellow

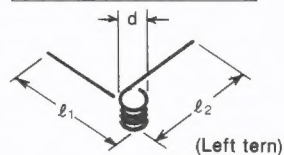
■ SPRING LOCATIONS



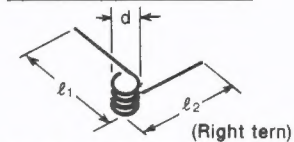
Ref. No.	$\ell \times d$ (mm)
M55	7×3
M56	13.5×3
M57	9×2
M58	11×3
M59	6.5×2
M113	11×3



Ref. No.	$\ell \times d$ (mm)
M86	5.5×4.5
M91	3.5×3



Ref. No.	$\ell_1 \times \ell_2 \times d$ (mm)
M43	10×18×3.5
M44	18.5×18.5×5
M45	13×13.5×4
M46	12×18×4.5
M47	15×13×4.5
M49	13.5×15×3.2
M53	13.7×18×6
M54	7×10.5×2.5
M111	11×11×4



Ref. No.	$\ell_1 \times \ell_2 \times d$ (mm)
M48	14.5×15×4.5
M50	14.6×10×3.2
M51	14.5×22.8×4
M52	14×16×4
M110	14.5×14.5×4
M112	13×9×4

Screw Dimensions Quick Reference

• Dimensions

XSN 3 + 10 = Pan head machine screw, 3mm in diameter, 10mm long.

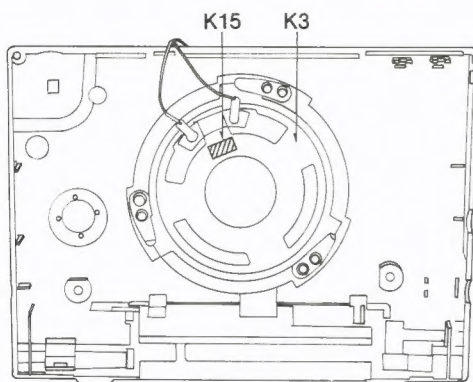
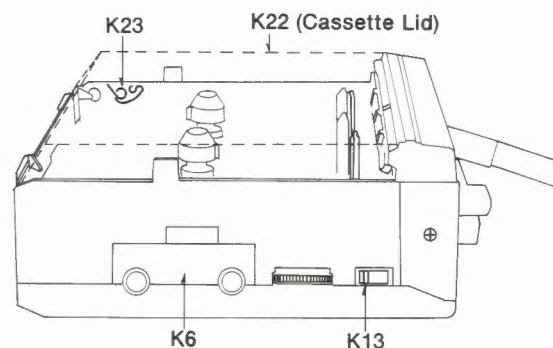
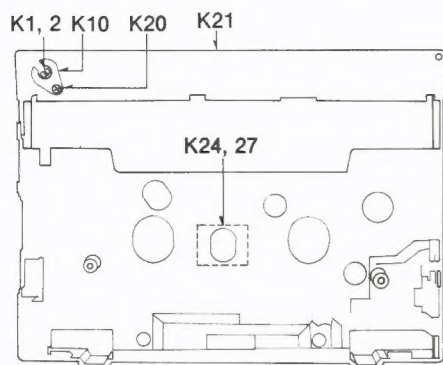
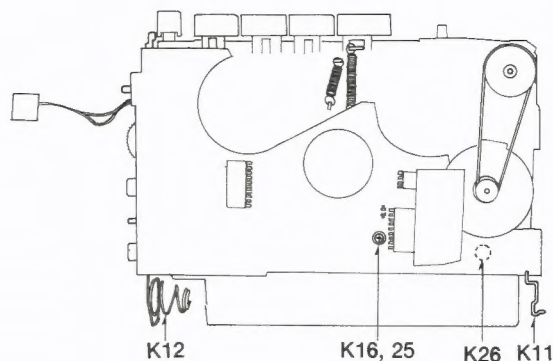
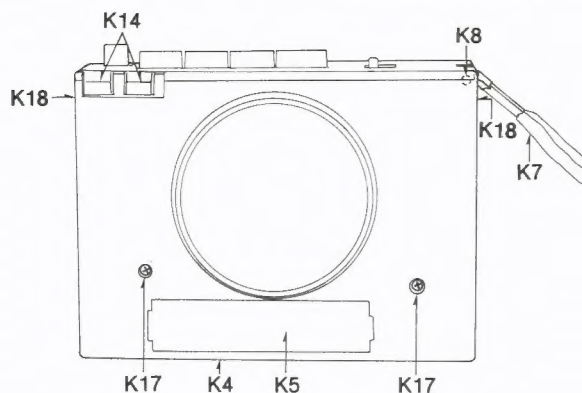
Type/Diameter/Length

• Types

Precision machine screw	Machine screw	Tapping/Tap-tight machine screw
XQC Flat head	XSB Binding head	XTB Binding head
XQG Oval fillister head	XSC Oval countersunk head	XTC Oval countersunk head
XQH Flat fillister head	XSH Flat fillister head	XTN Pan head
XQS Flat head	XSN Pan head	XTS Flat head
	XSS Flat head	

- 11 -

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Important safety notice

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Note:

The color name in parentheses () in the parts list is the color of the part.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			K 15	QBM1344	Retainer (Speaker)	K 26	RNCA0002Z	Collar (Front Cabinet)
K 1	WM063Y	Microphone	K 16	XQNC16A4F	Screw $\Phi 1.6 \times 4$ (P.C Board M'tg)	K 27	RHPA0006Z	Sheet (Reflection Sheet Sticking)
K 2	QBG1695	Rubber (Microphone)	K 17	XTN2 + 8JFY	Screw $\Phi 2 \times 8$, Rear Cabinet Ass'y M'tg (Silver)	ACCESSORIES		
K 3	EAS45P108C	Speaker	K 18	XQN16 + A4FZ	Screw $\Phi 1.6 \times 4$, Front Cabinet M'tg (Black)	A 1	RP29XP	AC Adaptor Δ
K 4	RYFQ382J7	Rear Cabinet Ass'y (Gray)	K 20	XTNQ16C4D	Screw $\Phi 1.6 \times 4$ (Microphone M'tg)	A 2	RQKA0001Z	Carrying Case (Black)
K 5	RYNQ382J7	Battery Cover Ass'y (Gray)	K 21	RKMA0003Y	Front Cabinet (Black)	A 3	RQX4751Z	Operating Instructions
K 6	RHRA0004Z	Jack Board (Black)	K 22	RYQQ382M	Cassette Lid Ass'y (Gray)	PACKINGS		
K 7	QYH0116K	Hand Strap Ass'y (Black)	K 23	RUSA0004Z	Spring (Cassette Lid Ass'y)	P 1	RPKA0010Z	Gift Box
K 8	QMN2859	Shaft (Hand Strap Ass'y)	K 24	RHP110Y	Sheet, Reflection (Silver)	P 2	XZB16X25A02	Polyethylene Cover
K 10	RMDA0003Z	Angle (Microphone M'tg)	K 25	XWA17BFY	Washer $\phi 1.7$ (P.C Board M'tg)	P 3	RPNA0006Z	Cushion
K 11	RJCA0003Z	Terminal (Battery +)				P 4	RPNA0007Z	Pad
K 12	RJCA0004Z	Terminal (Battery -)						
K 13	RBDA0001Z	Knob, MIC SENS (Red)						
K 14	RBDA0002Z	Knob, PAUSE, VAS (Gray)						